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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/518,603

06/27/2005

Aksel Baagoe Jepsen

6495-0087WOUS

2673

35301 7590 04/27/2007  
MCCORMICK, PAULDING & HUBER LLP  
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EXAMINER

DEBERADINIS, ROBERT L

ART UNIT

PAPER NUMBER

2836

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PH

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/518,603	JEPSEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Robert DeBeradinis	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,13,15,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 3-6,8-12,14,16-19,22 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/9/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,7,13,15,20,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAKATA et al. 5,625,539 in view of LI et al. 6,563,718.

#### CLAIMS 1,7.

NAKATA discloses a power converter for transforming energy from a green power unit (solar cell 2) into energy to a grid (commercial power system 3), the power converter comprising a DC/DC-converter and a DC/AC-inverter and the DC/DC-converter comprises a transformer for transferring energy to the DC/AC-inverter.

NAKATA does not disclose wherein the DC/DC-converter forms a first module and the DC/AC-inverter forms a second module wherein the first module comprises a first controller and power switches controlled by said first controller, that the second module comprises a second controller and power switches controlled by said second controller, that the first and second controller perform communication with each other via a communication bus.

LI discloses primary power stage having said primary controller and secondary power stage having said secondary controller and the communication path between the secondary controller and the primary controller utilizes an opto-coupler for providing DC

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isolation for the control loop used where safety regulations require galvanic isolation between the AC line voltage and the outputs of a switch-mode power supply (col. 1, lines 45-60).

It would have been obvious to one having ordinary skill in the art at the time of this invention to have modified the DC to AC inverter system to have first and second modules including their first and second controllers, communicating over an isolated communication path, to provide galvanic isolation between the AC grid and the DC source for safety reasons.

#### CLAIM 2.

NAKATA et al. in view of LI et al. discloses the power converter according to claim 1.

Current sourced, voltage sourced topology is well known, Applicant's admitted prior art (specification page 28).

NAKATA discloses current sourced solar cell (2) and the inverter voltage sourced AC.

#### CLAIM 13.

NAKATA et al. in view of LI et al. discloses the power converter according to claim 2.

NAKATA discloses wherein the DC/DC-converter comprises an H-bridge consisting of power switches (4,8).

CLAIM 15.

NAKATA et al. in view of LI et al. discloses the power converter according to claim 2.

NAKATA discloses wherein the power converter comprises a push pull converter (Q1,Q4).

CLAIM 20.

NAKATA et al. in view of LI et al. discloses the power converter according to claim 1.

NAKATA discloses current loop (It) and voltage loop (Vout).

CLAIM 21.

NAKATA et al. in view of LI et al. discloses the power converter according to claim 1.

LI discloses galvanic isolation between (302) and (304) inferring that M1 is connected to first module and M2 is connected to second module.

***Allowable Subject Matter***

Claims 3-6,8-12,14,16-19,22,23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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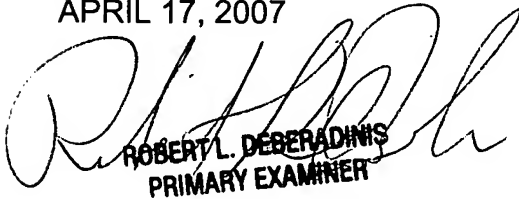
Any inquiry concerning this communication should be directed to Robert L.

DeBeradinis whose number is (571) 272-2049. The Examiner can normally be reached Monday-Friday from 8:30 am to 5:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Brian Sircus, can be reached on (571) 272-2058. The Fax phone number for this Group is (571) 272-8300.

RLD

APRIL 17, 2007

  
ROBERT L. DEBERADINIS  
PRIMARY EXAMINER